

memorandum



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Date: October 1, 2013

To: **Ms. Bozhena Palatnik** From: Mark Spencer
City of Belmont
Public Works Department

Project: BLM001

Subject: Ralston Avenue Corridor Study and Improvements –
Community Workshop #2 and Open House Meeting Notes

The purpose of this memorandum is to summarize the second Community Workshop and Open House held at the Twin Pines Senior Center and Community Center in Belmont on September 18, 2013. The agenda for the meeting is attached to this memo.

1. Attendance

The open house began at 6:00 p.m. At the beginning of the presentation (6:30 p.m.) there were about 54 people in attendance, including the consultant team and City staff. The sign-in list is attached to this memo.

Meeting Overview

The meeting began with opening remarks Public Works Director Afshin Oskoui. This was followed by a by W-Trans and Alta that included the study background, purpose, goals, plan process, and potential corridor improvement options.

2. Public Comments

In this portion of the meeting, community members were asked to provide general comments regarding the potential Ralston Avenue improvement options. The maps and improvements matrix that describe each segment, and that were posted on the wall at the Community Workshop, are attached to this memo.

Segment I (US 101 to El Camino Real)

The presentation described the issues identified in Segment I and the improvement options were shown on a map. Comments included:

- Cut-through traffic is a major source of congestion along the corridor. Drivers also use other possible routes, such as Hiller Street to Masonic Way, and Emmett Avenue to avoid Ralston Avenue.
- It was stated that drivers leaving the Redwood Shores area primarily use Ralston Avenue as a cut-through route if US 101 is congested, therefore, traffic volumes on Ralston Avenue vary daily.
- The Ralston Avenue intersections with El Camino Real and Old County Road are a common area of congestion that could possibly be improved by better signal coordination. This could be further improved by northbound protected left-turn phasing at Old County Road.

- A mix of people supported both bicycle lane options. Some people preferred bicycle lanes on Ralston Avenue while others preferred the alternative route on Masonic Way.
- Some bicyclists use Ralston Avenue to Hiller Street as an alternate route to staying on Ralston Avenue.
- Some concern was expressed if the existing bicycle lanes on Masonic Way would be wide enough to accommodate increased bicycle traffic and if there is adequate separation from parked vehicles. Also, some concern was expressed about the transition between Ralston Avenue and Masonic Way, including the off-street paths under the Caltrain crossing.
- There needs to be better connectivity to the bicycle and pedestrian bridge crossing US 101, especially for people on the south side of Ralston Avenue as some users currently use the vehicle overpass due to difficulties reaching the bicycle and pedestrian bridge.
- An off-road, shared two-way bicycle path was suggested.
- Vehicle speed is not as much of an issue on Segment 1 as it is on the other segments.

Segment 2 (El Camino Real to South Road)

The presentation described the issues identified in Segment 2 and the improvement options were shown on a map. Comments included:

- Regarding the intersection of Ralston Avenue/El Camino Real:
 - A grade-separated pedestrian and bicycle bridge would be beneficial.
 - Concern was expressed that the recent removal photo enforcement equipment at this intersection will lead to more red light runners
 - It is difficult to make an eastbound left-turn at the intersection because of conflicting pedestrian crossings which then causes a back-up on Ralston Avenue. Some drivers turn on 6th Avenue as an alternative route.
 - Drivers turning into the adjacent driveway at the southwest corner (Belmont Village Center) are a common source of delay on Ralston Avenue.
 - It would be beneficial to extend the eastbound left-turn lane to allow for more queuing space.
 - Additional pedestrian crossing time would be beneficial.
- Multiple comments were given on the existing traffic signal at Ralston Avenue/6th Avenue:
 - The cycle length is not adequate to clear queues.
 - Northbound right-turn drivers do not see pedestrians in the crosswalk and suggests an early pedestrian release.
 - 6th Avenue is typically the end of the downtown-area congestions and some west drivers accelerate excessively after the intersection.
 - It was asked if a roundabout is an option at this intersection.

- Pedestrian crossing enhancements would be beneficial at El Camino Real/Emmett Avenue and Emmett Avenue/6th Avenue.
- A mid-block crosswalk was requested on Ralston Avenue between El Camion Real and 6th Avenue. It was noted that there used to be a crosswalk here and has since been removed.
- While some attendees supported the Emmett Avenue bicycle route, concern was expressed that the heavy business-related traffic on Emmett Avenue would be hazardous for bicyclists. Other attendees expressed support for bicycle lanes on Ralston Avenue.
- It was acknowledged that while there are alternative bicycle paths within Twin Pines Park, it is usually slower to ride on the paths than on Ralston Avenue.

Segment 3 (South Road to Alameda de las Pulgas)

The presentation described the issues identified in Segment 3 and the improvement options were shown on a map. Comments included:

- It was stated that there is a need for either signalization or installation of a roundabout at South Road.
- Narrow vehicle lanes were suggested to allow for installation of bicycle and pedestrian facilities.
- It was noted that there is a need for crosswalks at mid-block locations as well at minor-street intersections.
- It was stated that drivers commonly cross into bicycle lanes along curves and it was suggested that barriers be installed to prevent this from happening.
- A bicycle and pedestrian crossing of Ralston Avenue was recommended at the west end of Twin Pines Park, not just at the main driveway.
- It was asked if any of the improvement options would require Ralston Avenue to be widened.
- There were concerns expressed regarding restricting northbound left turn movements from Chula Vista Drive onto Ralston Avenue (this would be part of an option that includes a roundabout just to the east on Ralston Avenue).
 - This would restrict access.
 - This would lead to additional cut-through traffic elsewhere in nearby neighborhoods.
 - Forcing everyone to turn right and then make a U-turn at the roundabout isn't worth the hassle, and while this option had some support, overall it had less support than leaving the northbound left turn access as is.
- The University entrance is a common source of congestion, especially the eastbound left-turn movement into the University.
- It was suggested that an enhanced crosswalk is needed at Chula Vista Drive as well as other minor streets.
- It was recommend that a sign be installed at Chula Vista Drive instructing drivers to do a "courtesy yield" when there is somebody turning at Chula Vista Drive.

- Another commenter stated that such a yield movement is dangerous due to backups on Ralston Avenue.
- There is no pedestrian access into Notre Dame High School where a potential crosswalk is shown. It was therefore recommended that the proposed enhanced crosswalk should be located elsewhere. (placement of the crosswalk on the map was an error that will be corrected; the intent of this option is to locate a crosswalk at the high school pedestrian entrance).
- The lane merge east of Alameda de las Pulgas has been the site of a bicycle crash. It was stated that it is difficult for drivers turning at the driveway to see bicyclists and pedestrians, and it was suggested that left-turn movements be prohibited.
- It was suggested that facilities be designated for bicyclists on one side of Ralston Avenue and pedestrians on the other side.
- The westbound left-turn at Ralston Avenue/Alameda de las Pulgas is difficult for bicyclists. Some people prefer to merge left where as others prefer to complete a two-stage turn.
- It was asked if a reversible center lane on Ralston Avenue was considered.
- It was asked why the continuous bicycle lanes along this segment were removed.
- It was stated that the bicycle path adjacent to Notre Dame High School does not work well.

Segment 4 (Alameda de las Pulgas to SR 92)

The presentation described the issues identified in Segment 4 and the improvement options were shown on a map. Comments included:

- A need for traffic calming was brought up, and the discussion included ideas for traffic calming such as a road diet (with reduction in roadway capacity and increased travel time delay). In general, attendees were opposed the idea of implementing a road diet. Of the two road diet options, the partial road diet had the most support, but the majority of those in attendance still opposed the idea. There was concern that the road diet would result in heavy congestion during school drop-off and pick-up periods and would result in many drivers experiencing increased travel time.
- Many people expressed that their preference would be to prioritize pedestrian safety, especially on routes to schools. It was stated that safety was more important than travel times or speeds.
- In response to the potential signalization of Ralston Avenue/Tahoe Drive and the accompanying modification to access at Ralston Middle School, the following comments were made:
 - The required U-turn movement would be awkward and difficult.
 - There is a need for transit vehicles to turn directly into the school parking lot. A possible solution would be to allow buses only to make the left-turn movement.
 - There is a need to lengthen the left-turn lane at the school driveway as the queue commonly extends beyond the turn pocket during peak periods.
 - Either a full or partial traffic signal was recommended at the school driveway.
 - It was asked if a tunnel structure could be built to eliminate the left-turn movement.

- It was asked if signalization of either intersection would slow traffic on Ralston Avenue.
- There were many comments supporting widening sidewalks, closing gaps in sidewalks and installing other pedestrian facilities.
- It was suggested that the median could be narrowed in an effort to obtain more space for pedestrian and bicycle facilities. It was stated that this would have a secondary benefit of removing trees which currently damage the roadway and sidewalk.
- In many areas the sidewalk is narrow, making it difficult to walk along Ralston Avenue.
 - It was suggested that a protective railing be installed near Hallmark Drive to prevent potential vehicle-pedestrian conflicts.
 - It was stated that in many areas 4-feet is not sufficient sidewalk width.
 - The segment between Lassen Drive and Tahoe Drive was identified as a location needing sidewalks.
 - Some sidewalks are further narrowed due to vegetation and hillside encroachment, which could be improved with better maintenance.
- It was stated that there are alternative routes which bicyclists can travel along this segment of Ralston Avenue, but the routes need to be identified (i.e. Belmont Canyon Road).
- The pedestrian crossing at Hallmark Drive is frustrating for pedestrians and drivers:
 - Attendees noted that there are problems with crossing guards allowing a continuous crossings resulting in drivers not having an opportunity to turn.
 - A pedestrian overcrossing was suggested. The commenter stated that it would be acceptable for there to be stairs if there is not enough space for ramps.
 - An exclusive pedestrian crossing traffic signal phase was suggested for this location.
- Due to the elevation changes, it was recommended that a bicycle lane is only needed in the uphill (westbound) direction on the north side of Ralston Avenue. However, most of the schools are on the south side of Ralston Avenue.

General Comments

- The focus of this presentation has been on pedestrians and bicyclists and questions were asked about how many pedestrians and bicyclists current use the corridor and how many would benefit from the improvements.
- There has been no discussion of relieving vehicle congestion. There were concerns expressed that increasing vehicle congestion would have negative impacts on bicycle and pedestrian safety.
- Several people asked about costs and implementation timelines.
- Can speed limits be changed on the corridor? Will improvement options result in lower speed limits? Regardless of the speed limit, more police enforcement is needed.

- There are two types of bicycle riders: commuters and family riders, who require different design consideration.
- There are many areas where sidewalk is narrow making it difficult to use. Furthermore, the surface quality of the sidewalk varies along the corridor.
- Questions were asked about what portion of traffic on Ralston Avenue is local-serving verses regional, cut-through traffic.
- It was suggested that signal timing be used to discourage cut-through traffic. This would mostly affect signals near US 101 and SR 92.
- Opinions were expressed both in favor and in opposition to roundabouts.
- What are the current truck restrictions on Ralston Avenue? Would roundabouts accommodate all trucks?
- Advanced stop bars would be beneficial at crosswalks.
- Suggested a sign campaign like one used in Redwood City with statements such as: "Are you going to end a child's life today?"
- It was asked if photo speed limit enforcement is possible.
- It was noted that there are no school limit speed limit signs on Ralston Avenue.
- There were acknowledgements that there is a need to find a balance between all comments and community needs.
- It was recommended that some simple improvements are possible which include:
 - Larger, easier to see signs
 - More speed limit signs
 - Better lighting
 - Drivers ignore pedestrian-activated flashing lights, therefore the lights need to be brighter
 - Better striping
- One commenter supported decreased vehicle capacity, but felt it was unlikely to occur.
- Some people stated that they needed to see more details on proposed improvements before being able to comment.
- A citywide opinion survey was suggested to capture as much input as possible.
- It was recommended that project information packets be placed at upcoming civic events, such as election candidate forums.
- There was concerns that if Crystal Springs Road connected to Ralston Avenue that this would increase traffic.

Comments on School Issues

- SamTrans buses are commonly full and additional buses would allow more students to take the bus to school.
- Staggered school start times were suggested to lessen traffic congestion.
- A second middle school was suggested to reduce the number of people who to drive to Ralston Middle School.
- School traffic is a common source of congestion. It was stated that congestion is notably worse when schools are in session. Improvements to transport students to school without relying on personal vehicles would relieve this congestion.

3. Meeting Wrap-Up

Mark Spencer discussed the next steps in the study process and reiterated the opportunities for the public to participate in the Ralston Avenue Corridor Study. The workshop concluded at 9:15 p.m.

Attachments:

1. Meeting Flyer and Agenda
2. Sign-In List
3. Presentation Maps, Segments 1-4
4. Improvements Matrix, Segments 1-4



RALSTON AVENUE CORRIDOR STUDY COMMUNITY WORKSHOP AND OPEN HOUSE – PRELIMINARY DESIGN CONCEPTS

YOUR INPUT IS NEEDED

The Belmont City Council and Public Works Department invite you to attend the second public meeting for the Ralston Avenue Corridor Study.

The City has embarked on a mobility assessment for Ralston Avenue from State Route 92 in the west to U.S. Highway 101 in the east. The goal of the project is to identify key short-term and long-term transportation projects that will address walkability, bicycling, access to transit and traffic flow along the corridor. As this corridor is diverse in pedestrian activity, traffic patterns and community character, the corridor has been broken into three distinct zones. By breaking the corridor down, the community and project team can focus on the specific issues within that area.

Over the next several months, the City will hold two workshops to discuss the project with the community. These workshops are geared toward identifying solutions to help improve mobility along Ralston Avenue.

During the first community meeting in April 2013, we heard from the community about challenge areas and opportunities for improvement along Ralston Avenue. The purpose of this second meeting is to share data collected, traffic analysis findings, and provide the opportunity for members of the community to review and provide input to preliminary design concepts.

Please join us:

September 18, 2013

***6:00– 6:30 p.m. Informal Meet & Greet
6:30-7:30 p.m. Presentation and Discussion
7:30-8:30 p.m. Community Open House
8:30-9:00 p.m. Meeting Wrap-up***

***Twin Pines Senior and Community Center
20 Twin Pines Lane; Belmont, CA 94002***

We want to hear from you!

Public participation is an important and ongoing part of the study. The community will guide the vision and outcomes. Before and after the presentation, the public is invited to look through maps and displays and speak to team members who will be available to answer questions.

Visit the website below for information on upcoming meetings, background documents, and other opportunities to share your thoughts.

<http://www.ralstonavenuecorridorstudy.org/>



Please Sign In

Ralston Avenue Corridor Study Community Workshop and Open House - Preliminary Design Options
Wednesday, September 18, 2013

Name	Address	Affiliation (Specify Which School, Business, Agency, Etc.)	Email Address	Did you attend the 1st Community Workshop In April 2013?	
				Yes	No
Danahay and Beutley Henderson	1525 Peloton Ave.	Prop owner			X
Perry Kenna	Belmont	Resident	pkenandmin.com	—	X
RUTH MARINSHAW	1507 Ralston Ave	Resident	ruthm@stanford.edu		X
Anne Strehlau	3410 Fullcrest Dr	Fox School Site Rector Committee Resident	connect@burtmiller.com		X
Tracey Perna	1528 VINE ST	RASTON SCHOOL- SAFE ROUTES REP RESIDENT	tfpsa.lapacbell.net		X
Perry Grivani	1613 Belburg Dr, Belmont	Resident	Perry-grivani@yahoo.com		X
Karin Held	2720 Wakefield Belmont	Planning Commissioner			X
Mary Morrissey Parden	1057A Alameda de las Pulgas Belmont	Belmont Chamber Property Owner, Business Owner	parden_insurance comcast.net		X

Danahay and Beutley Henderson
3406 Lodge
Daniel Pierce
Belmont 10st for parent
Jasper recognition
X

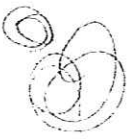
Please Sign In

Ralston Avenue Corridor Study Community Workshop and Open House - Preliminary Design Options
Wednesday, September 18, 2013

Name	Address	Affiliation (Specify Which School, Business, Agency, Etc.)	Email Address	Did you attend the 1st Community Workshop In April 2013?	
				Yes	No
Emily Sarver	1512 El Verano Way	PTA	esarver@comcast.net		✓
Lynne Dick Ashby	2701 Hallmark	BHCA	dickashoe@aatt.net		✓
Jim Smith	1515 Ralston	Neighbor	jim@productdevelopment.com		✓
BRIAN WRIGLEY	3102 E. LAUREL CIRCLE	RESIDENT	BRIAN.WRIGLEY@STANFORDALUMNI.ORG		✓
Guy Baygou	1527 Ralston	Resident of	belmateo@Gmsil.com		✓
Matthew & Simmons	19 Krumme Ct	President (Krumme Ralston School)	matt@kcrumme.net		✓
Kristin Morgan	2435 Simmons Dr	Planning Commission	kristin@kcrumme.net	✓	
Pete & Nana	1609 El Verano Way	Resident	pete.g.morgan@gmail.com		✓

add to email
notification

DAVID HOFFMAN 1917 Adams Ave Resident davidh@qgmail.com ✓



Please Sign In
Ralston Avenue Corridor Study Community Workshop and Open House - Preliminary Design Options
Wednesday, September 18, 2013

Name	Address	Affiliation (Specify Which School, Business, Agency, Etc.)	Email Address	Did you attend the 1st Community Workshop in April 2013?	
				Yes	No
Jennifer Denton (by email)		Alta Planning+Design	jrdenton@alta.com	✓	
Emma Shiles		Silicon Valley Bicycle Coalition	emma@siliconvalleybicycling.org		✓
Cory Roach		Penninsula Velo cycling club	cory.roach@peninsula Velo.org		✓
Chris Julie Vance	1300 Ralston Ave Belmont, CA	live in Ralston	vance1300@gmail.com		✓
Erik Salander	1908 Valdez Ave	Penninsula Velo Cycling Club	esalander@gmail.com		✓
JONATHAN GERMAN	307 Twin Pines LONE, BELMONT, CA 94002	CITY of Belmont Parks & Rec	jgerman@belmont.gov	✓	
Thomas Hl	✓	✓	thl@belmont.gov		✓
Gary E. Ebel	1520a Crestview Dr Twin Oaks, CA 94020		gary@belmont.gov		✓

ROY EBEL 1703 Ralston _____ R. J. EBBEL & HOLBROOK, CORP. ✓

Please Sign In

Ralston Avenue Corridor Study Community Workshop and Open House - Preliminary Design Options
Wednesday, September 18, 2013

Name	Address	Affiliation (Specify Which School, Business, Agency, Etc.)	Email Address	Did you attend the 1st Community Workshop In April 2013?	
				Yes	No
Charles Stone	4614 Red Hill Ave. Belmont, CA 94002	Resident	cstone75@gmail.com		✓
Mike Varolone	1848 Belhurst dr. Belmont, CA 94002	Res	McVardone@varolone.com		✓
VALENTINE DENTON	90111 STREET BELMONT	Resident	UDHARWANDER@BELLNET.COM	✓	
BARBARA GOLDEN	1500 Grandview Way Belmont	Resident	mazzagolden@comcast.net		didn't know about it
Jane Ledoux BOB Ledoux	840 Miramar	Residents	Jan Ledoux@yahoo.com		✓
Adele Della Santina	2704 St James Rd	Chamber of Commerce	adeleds@aol.com		✓
Sarah Waggon	1741 Alden Street	Resident	smwaggon@gmail.com		✓
Margaret Dato	1150 Oakview St	Resident	MargaretDato@gmail.com		✓
Matthew Carington	1514 Escudido way Belmont	Resident	matth.carington@clapiper.com		✓

Please Sign In

Ralston Avenue Corridor Study Community Workshop and Open House - Preliminary Design Options
Wednesday, September 18, 2013

Name	Address	Affiliation (Specify Which School, Business, Agency, Etc.)	Email Address	Did you attend the 1st Community Workshop in April 2013?	
				Yes	No
Huan Phan	1512 Chula Vista Dr. 94002	Copriand	huanphan@gmail.com		X
Josh Partner	2509 Carmelita Ave Belmont CA 94002		joshpartner@gmail.com		X
JOHN VIOLET	404 WILKINS DR BELMONT CA 94002	CITY TREASURER	JOHN.VIOLET@PICKSILL.NET		X
RAM DAVIS	1150 CHULA VISTA				
ROBERT MAYER	EL VERDUGO WAY	RETIRED	mayerglad@gmail.com		
Ken Perkins	El Verduo Court		kenperkins@gmail.com		X
Greg Galan	City of Belmont				
Jean G. Conde	NANU	Community Planner	jconde@ndhu.edu	X	

Nicola Werskopf 1530 Escondido Way
nicolawerskopf@yahoo.com X

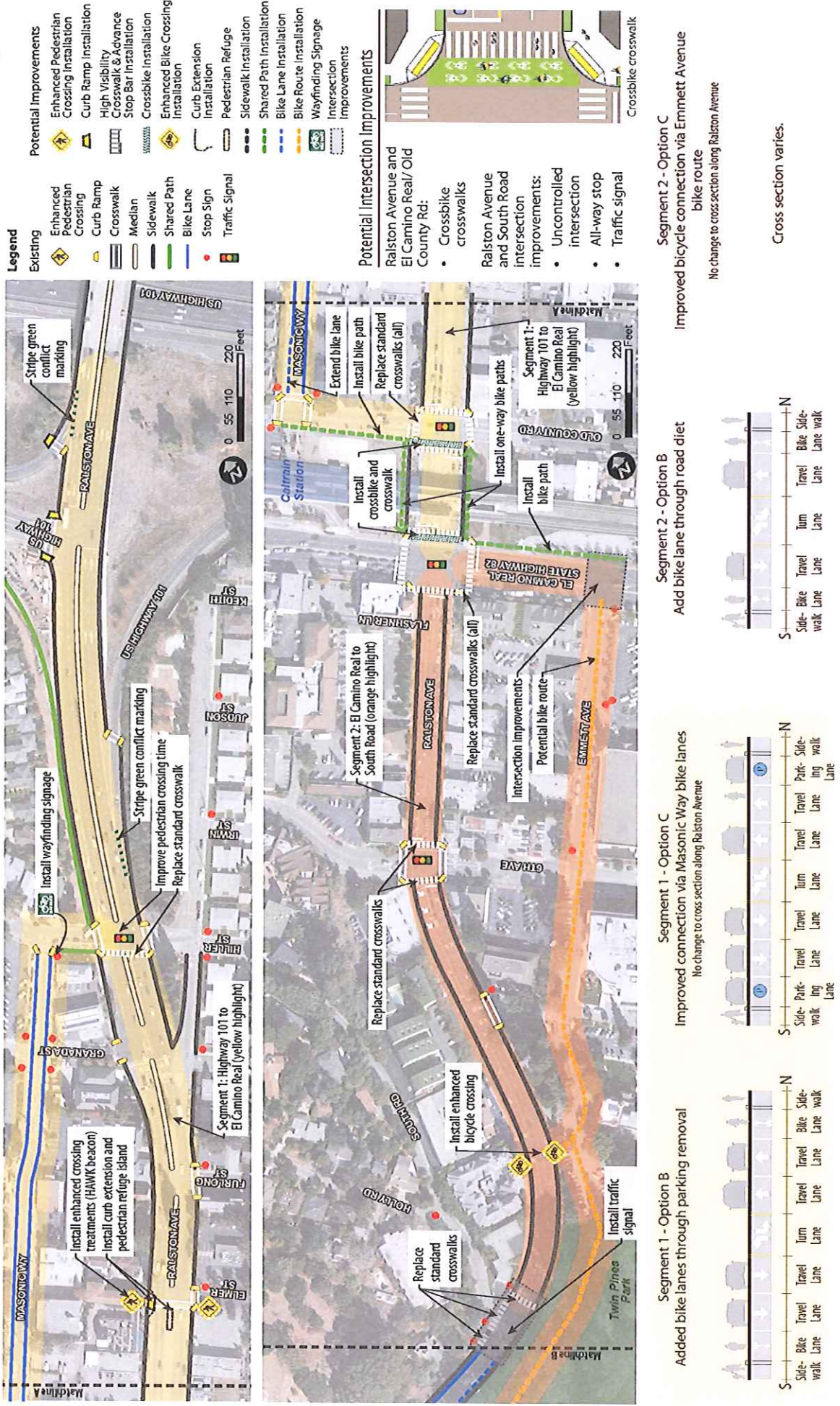
Please Sign In

Ralston Avenue Corridor Study Community Workshop and Open House - Preliminary Design Options
Wednesday, September 18, 2013

Name	Address	Affiliation (Specify Which School, Business, Agency, Etc.)	Email Address	Did you attend the 1st Community Workshop in April 2013?	
				Yes	No
Barry Lake	1720 E 1st Ave	Resident			X
Mike Swire		Petition organizer	mswire@yahoo.com	✓	
Carri Chen	407 Hilber	Resident, Sterling Trails Neighborhood Assoc.	carri.chen@gmail.com		X
Michael San Filippo	1517 Ralston	Resident	MichaelS342@yahoo.com		X
Sumitra Chatterjee	2835 W Nightingale Ave	Resident / Parent	CHATTERJEE@YAHOO.COM		
Mitch and Paula Thurston	1521 Ralston Ave	Resident	PThurston@gmail.com		✓
Stephen Cann	1720 E 1st Avenue	Resident	scann@hotmail.com		✓
Letitia Alvar		City of Belmont	peterson@belmont.ca	✓	
Peter Meier	2572 Cornstock Circle	Resident	peterson@belmont.ca		X

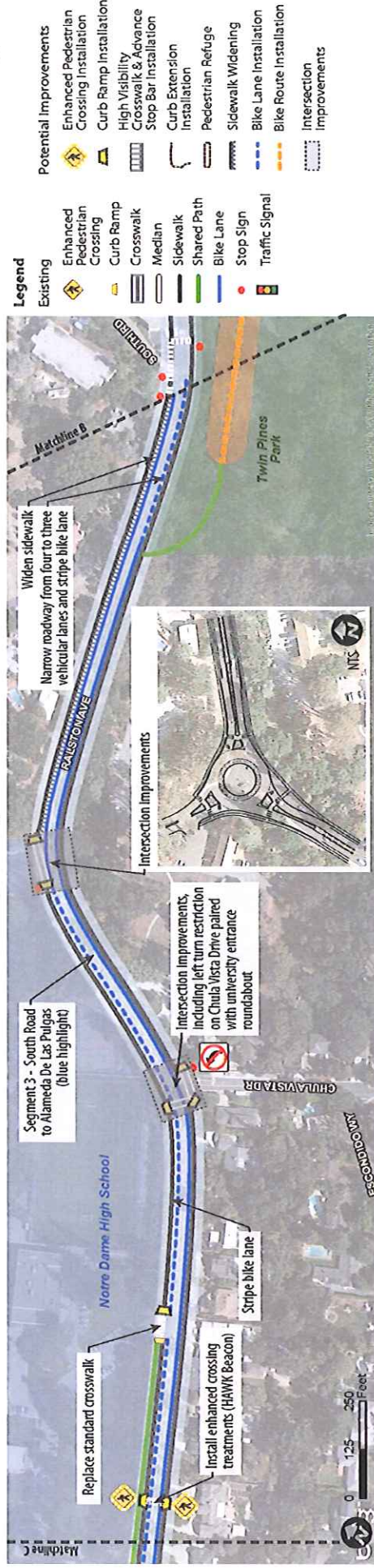
Ralston Avenue Corridor - Highway 101 to South Road Improvement Alternatives

Figure 1



Ralston Avenue Corridor - South Road to Alameda de las Pulgas Improvement Alternatives

Figure 2



Potential Intersection Improvements

Ralston Avenue and University Entrance:

- Roundabout
- Signalization

Ralston Avenue and Chula Vista Drive:

- No left turn out paired with university entrance roundabout

Ralston Avenue and Notre Dame Avenue:

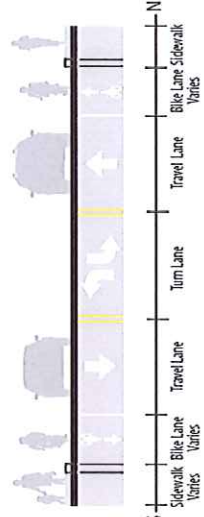
- Signalization



Segment 3 - Option A

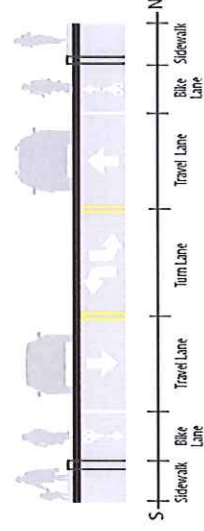
Intermittent bike lanes

No change to cross section along Ralston Avenue



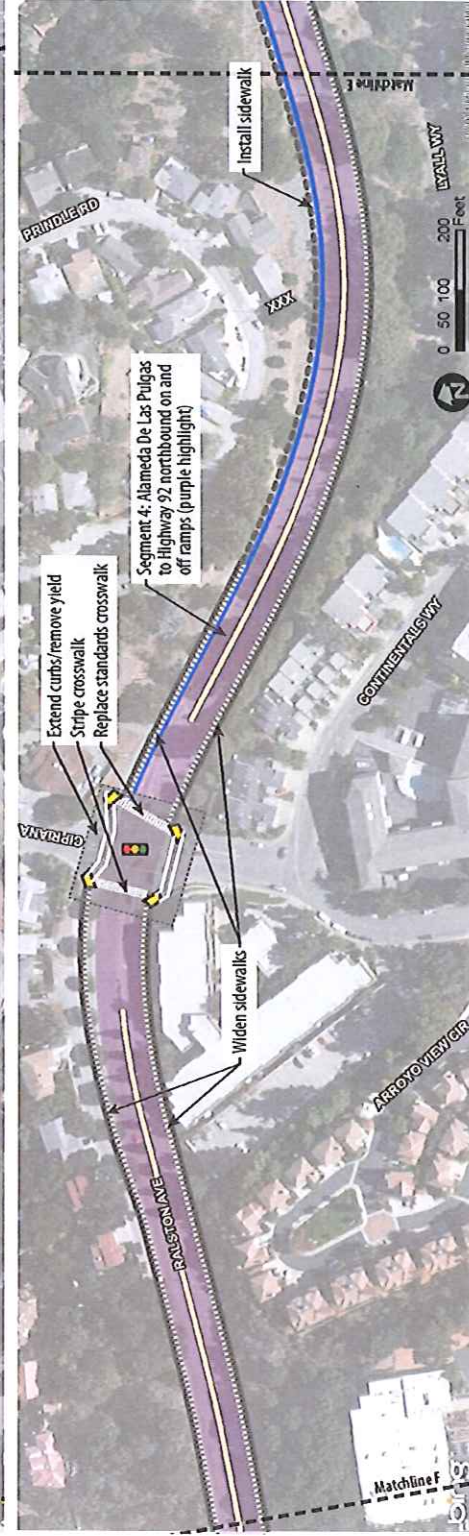
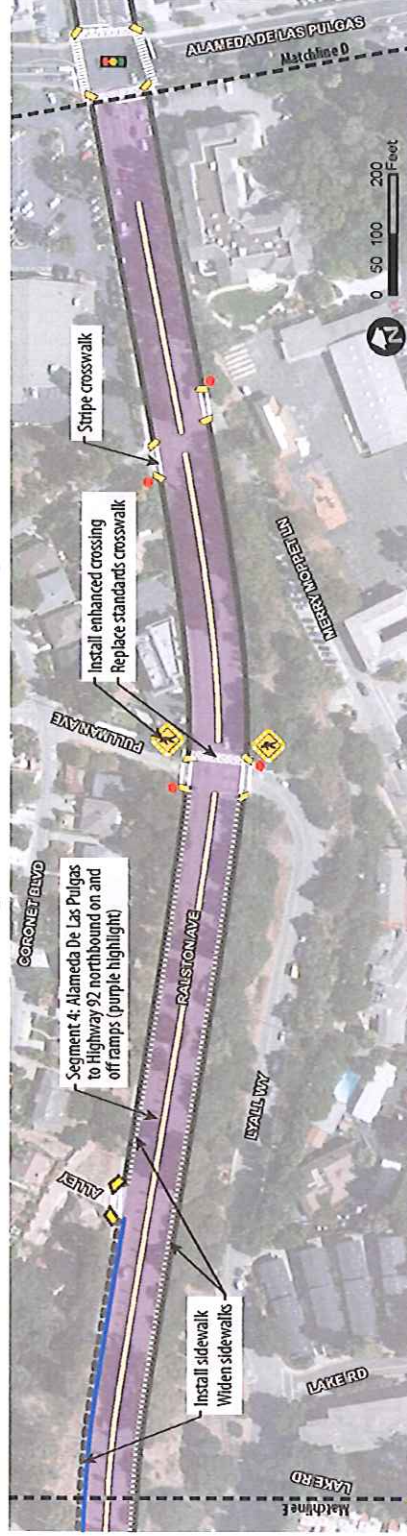
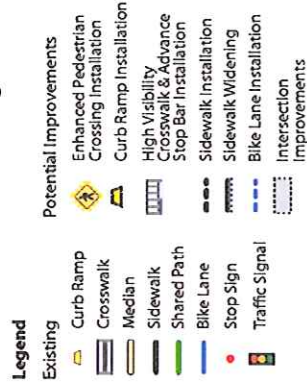
Segment 3 - Option B

Stripe bike lanes



Ralston Avenue Corridor - Alameda de las Pulgas to State Route 92 Improvement Alternatives (Sheet 1 of 3)

Figure 3a



Potential Intersection Improvements

- Ralston Avenue and Cipriani Boulevard:
- Close free right turns

Segment 4 - Option A

Bike route and intermittent sidewalks
No change to cross section along Ralston Avenue



Segment 4 - Option B

Stripe bike lane through travel lane removal



Segment 4 - Option C

Two-way cycletrack on south side



Segment 4 - Option D

Widen sidewalk on south side; no bike bikeway improvements



Ralston Avenue Corridor - Alameda de las Pulgas to State Route 92 Improvement Alternatives (Sheet 2 of 3)

Figure 3b

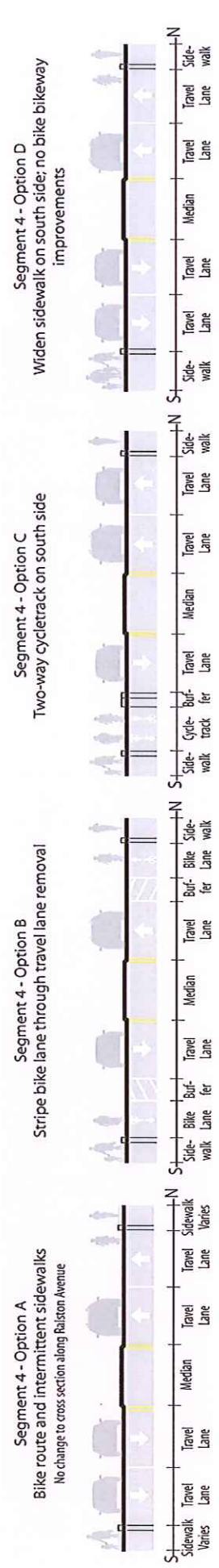
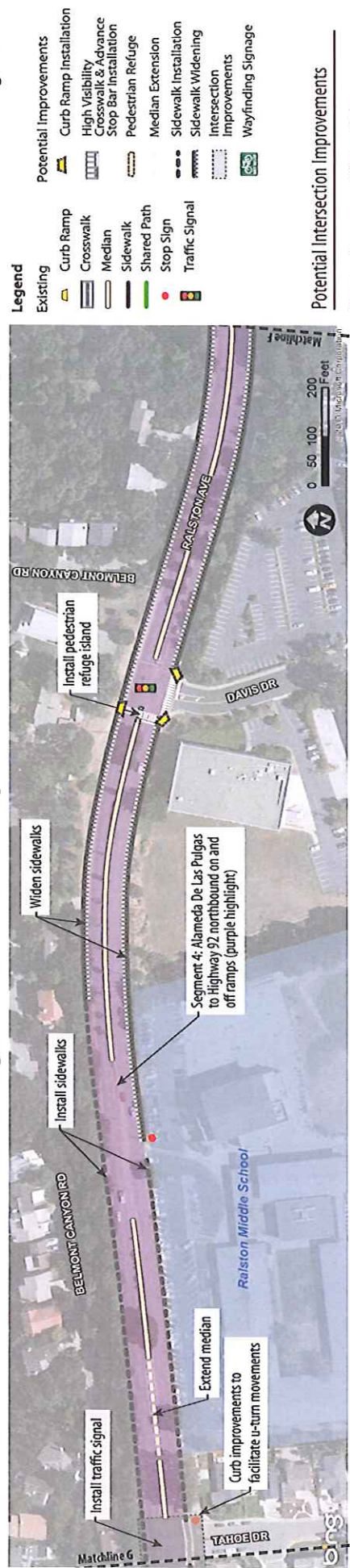


Figure 3c

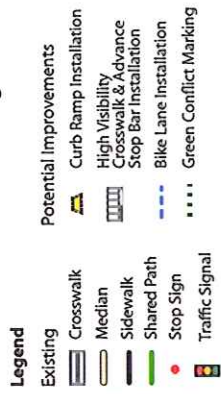


Table 1
Ralston Avenue Improvements Matrix
Segment I – Ralston Avenue between US 101 and El Camino Real

Option	Auto	Bike	Pedestrian	Transit	Right of Way	Pros	Cons
Segment Options							
Option IA – No Change to Ralston Ave							
Option IB – Class II Bicycle Lanes on Ralston Ave through parking removal	-	+	o	o	o	<ul style="list-style-type: none"> Minimal impact to vehicle travel times Improves bicycle connectivity Limited or no need for additional right-of-way 	
Option IC – Designate an alternative bicycle route on Masonic Way with no change to Ralston Ave	o	+	o	o	o	<ul style="list-style-type: none"> No change to vehicle travel times Improves bicycle connectivity Primary bicycle facility would be located on a roadway with lower traffic volumes and speeds than Ralston Ave Limited or no need for additional right-of-way Enhanced crossing facilities to facilitate bicyclists who need to cross Ralston Ave to reach Masonic Way 	<ul style="list-style-type: none"> May increase bicycle travel distance Requires eastbound-travelling bicyclists to cross Ralston Ave
Option ID – Class III Bicycle Route on Ralston Ave	o	+	o	o	o	<ul style="list-style-type: none"> Increased bicycle visibility Marginal impact to vehicle traffic 	<ul style="list-style-type: none"> No separated bicycle facility Bicyclists may not feel comfortable riding in a vehicle lane Occasional impacts on vehicle travel speed No physical improvements for pedestrian connectivity
Safety and Access Improvement Options							
Increased pedestrian crossing times and install high-visibility markings at Ralston Ave/Hiller St	-	o	+	+	o	<ul style="list-style-type: none"> Added time to allow pedestrians to cross the street Increases pedestrian visibility 	<ul style="list-style-type: none"> Increase in average vehicle delay at the intersection

Table 1
Ralston Avenue Improvements Matrix
Segment 1 – Ralston Avenue between US 101 and El Camino Real

Option	Auto	Bike	Pedestrian	Transit	Right of Way	Pros	Cons
Enhanced pedestrian crossing at Ralston Ave/Elmer St, including HAWK beacon, refuge island and curb extensions	o	o	+	+	-	<ul style="list-style-type: none"> • Negligible impact to vehicle traffic • Increased pedestrian crossing visibility • Improves connectivity to transit service • When activated by a pedestrian, HAWK signals generally improve driver crosswalk compliance 	<ul style="list-style-type: none"> • There may be instances where drivers need to come to a complete stop even if a pedestrian is not in the crosswalk • May require limited right of way acquisition
One-way off-street bicycle paths under the Caltrain overcrossing (between El Camino Real and Old County Rd)	o	+	-	o	o	<ul style="list-style-type: none"> • Provides bicyclists with an option to ride outside of the travel lanes 	<ul style="list-style-type: none"> • Potential for conflicts between bicyclists and pedestrians
Green bicycle lanes on Ralston Ave where bicycle lanes cross the US 101 ramps	o	+	o	o	o	<ul style="list-style-type: none"> • Improves visibility and safety of bicycle lanes in conflict-prone areas 	
Upgrade the following sections to have ADA-compliant curb ramps: <ul style="list-style-type: none"> • Ralston Ave/US 101 SB Ramps • Ralston Ave/Furlong St • Ralston Ave/Elmer St 	o	o	+	o	o	<ul style="list-style-type: none"> • Provide enhanced access for persons with mobility impairments 	

Note: + indicates a positive impact; - indicates a negative impact; o indicates no impact

Table 2

Ralston Avenue Improvements Matrix
Segment 2 – Ralston Avenue between El Camino Real and South Road

Option	Auto	Bike	Pedestrian	Transit	Right of Way	Pros	Cons
Segment Options							
Option 2A – No Change to Ralston Ave							
Option 2B – Class II bicycle lanes achieved with a road diet – three lanes (one through in each direction plus a center turn lane). Includes signalization of Ralston Ave/South Rd	-	+	o	-	-	<ul style="list-style-type: none"> Improves bicycle connectivity Limited or no need for additional right-of-way Pedestrians may feel more comfortable with additional separation between Traffic calming 	<ul style="list-style-type: none"> Decreased travel speeds and increased intersection vehicular delay Transit vehicles would be affected by any increase in vehicle delay and travel time
Option 2C – Designate an alternative bicycle route on Emmett Ave while retaining existing configuration on Ralston Ave	o	+	o	o	o	<ul style="list-style-type: none"> No change to vehicle travel times Improves bicycle connectivity Primary bicycle facility would be located on a roadway with lower traffic volumes and speeds than Ralston Ave Limited or no need for additional right-of-way Enhanced crossing facilities to facilitate bicyclists who need to cross Ralston Ave and/or El Camino Real to reach Emmett Ave 	<ul style="list-style-type: none"> Potential increases bicycle travel distance Requires bicyclists to cross Ralston Ave and/or El Camino Real
Option 2D – Class III Bicycle Route on Ralston Ave	o	o	o	o	o	<ul style="list-style-type: none"> Increased bicycle visibility Marginal impact on vehicle traffic 	<ul style="list-style-type: none"> No separated bicycle facility Bicyclists may not feel comfortable riding in a vehicle lane Occasional impacts to vehicle travel speed
Safety and Access Improvement Options							

Table 2

Ralston Avenue Improvements Matrix
Segment 2 – Ralston Avenue between El Camino Real and South Road

Option	Pros					Cons
	Auto	Bike	Pedestrian	Transit	Right of Way	
Install high visibility crosswalk at Ralston Ave/El Camino Real, Ralston Ave/Sixth Ave, Ralston Avenue/Twin Pines Lane and Ralston Ave/South Rd	o	o	+	o	o	<ul style="list-style-type: none"> Increases pedestrian crossing visibility Negligible impact to vehicular traffic
Adjust signal timing at Ralston Ave/El Camino Real to provide an early pedestrian release	-	o	+	-	o	<ul style="list-style-type: none"> Gives pedestrians an opportunity to enter the crosswalk before opposing traffic receives a green light, thereby increasing pedestrian visibility Increases vehicle delay (including transit vehicle delay) when the pedestrian phase is activated

Note: + indicates a positive impact; - indicates a negative impact, o indicates no impact

Table 3
Ralston Avenue Improvements Matrix
Segment 3 – Ralston between South Road and Alameda de las Pulgas

Option	Auto	Bike	Pedestrian	Transit	Right of Way	Pros	Cons
Safety and Access Improvement Options							
No Change to Ralston Ave							
Convert South Road to be controlled with a traffic signal	+	+	o	o	o	<ul style="list-style-type: none"> Limited or no need for additional right-of-way Pedestrians would benefit from a controlled crossing of Ralston Ave at this location Improved delay and queuing along Ralston Avenue 	
Convert Notre Dame University Driveway to be controlled with a modern roundabout	-	+	o	o	-	<ul style="list-style-type: none"> Improves bicycle connectivity Pedestrians may feel more comfortable crossing at a roundabout compared to the existing configuration Traffic calming Improved access to the University Potential for community art or a gateway element within the roundabout Can be paired with restricting northbound left turn movements at Ralston Ave/Chula Vista Dr since drivers could make a U-turn movement at the roundabout 	<ul style="list-style-type: none"> Decreased travel speeds and increased intersection vehicular delay Requires additional right of way Potential for future increases in delay and queuing Transit vehicles would be affected by any increase in vehicle delay and travel time
Convert Notre Dame University Driveway to be controlled with a traffic signal	-	+	o	o	o	<ul style="list-style-type: none"> Limited or no need for additional right-of-way Pedestrians would benefit from a controlled crossing of Ralston Ave at this location Improved access to the University Reduced delay for motorist exiting the University 	<ul style="list-style-type: none"> Decreased travel speeds and increased intersection vehicular delay on Ralston Ave Transit vehicles would be affected by any increase in vehicle delay and travel time

Table 3
Ralston Avenue Improvements Matrix
Segment 3 – Ralston between South Road and Alameda de las Pulgas

Option	Auto	Bike	Pedestrian	Transit	Right of Way	Pros	Cons
Convert Notre Dame Ave to be controlled with a traffic signal	o	+	o	o	o	<ul style="list-style-type: none"> Limited or no need for additional right-of-way Pedestrians would benefit from a controlled crossing of Ralston Ave at this location Reduced delay for motorist exiting the neighborhood 	<ul style="list-style-type: none"> No physical improvements for pedestrian connectivity Decreased travel speeds and increased intersection vehicular delay on Ralston Ave Transit vehicles would be affected by any increase in vehicle delay and travel time
Install high visibility crosswalks at the Ralston Ave crossing at: <ul style="list-style-type: none"> South Rd Notre Dame High School Entrances Notre Dame Ave Misty Lane-Avon St Alameda de las Pulgas 	o	o	+	+	o	<ul style="list-style-type: none"> Increases pedestrian crossing visibility Negligible impact on vehicular traffic 	
Enhanced pedestrian crossing western Notre Dame High School entrance, including HAWK beacon	o	o	+	+	-	<ul style="list-style-type: none"> Negligible impact to vehicle traffic Increased pedestrian crossing visibility Improves connectivity to transit service When activated by a pedestrian, HAWK signals generally improve driver crosswalk compliance 	<ul style="list-style-type: none"> There may be instances where drivers need to come to a complete stop even if a pedestrian is not in the crosswalk May require limited right of way acquisition
Sidewalk Gap Closure	o	+	+	+	-	<ul style="list-style-type: none"> Improves pedestrian connectivity No impact on vehicle traffic Improves pedestrian connections to transit 	<ul style="list-style-type: none"> Requires right of way acquisition

Table 3
Ralston Avenue Improvements Matrix
Segment 3 – Ralston between South Road and Alameda de las Pulgas

Option	Auto	Bike	Pedestrian	Transit	Right of Way	Pros	Cons
Install high visibility crosswalk and curb extensions at Ralston Ave/Maywood Dr, retain the existing pedestrian activated flashing lights	o	o	+	+	o	<ul style="list-style-type: none"> Improves pedestrian connectivity Minimal impact on vehicle traffic Improves pedestrian connections to transit 	
Enhance crosswalk at Ralston Ave/Villa Lane including a center median refuge island	o	o	+	+	-	<ul style="list-style-type: none"> Improves pedestrian connectivity No impact on vehicle traffic 	
Install ADA-compliant curb ramps at: <ul style="list-style-type: none"> Ralston Ave/Notre Dame de Namur University Ralston Ave/Chula Vista Dr Ralston Ave/Notre Dame High School (both entrances) Ralston Ave/Notre Dame Ave Ralston Ave/Avon St Ralston Ave/Maywood Dr 						<ul style="list-style-type: none"> Provide enhanced access for persons with mobility impairments 	
Eliminate EB lane merge east of Alameda de las Pulgas with sharrow markings for bicyclists.	-	o	+	-	-	<ul style="list-style-type: none"> Improves pedestrian crossing at Villa Ln Improves pedestrian connections to transit 	<ul style="list-style-type: none"> Increases vehicle delay and travel time Would require the lane drop to occur prior to the Alameda de las Pulgas intersection Transit vehicles would be affected by any increase in vehicle delay and travel time

Note: + indicates a positive impact; - indicates a negative impact; o indicates no impact

Table 4
Ralston Avenue Improvements Matrix
Segment 4 – Ralston Avenue between Alameda de las Pulgas and SR 92

Option	Auto	Bike	Pedestrian	Transit	Right of Way	Pros	Cons
Segment Options							
Option 4A – No Change to Ralston Ave							
Option 4B – Bicycle lane and continuous sidewalk installation achieved with a road diet – one travel lane in each direction plus a center turn lane.	-	+	+	-	-	<ul style="list-style-type: none"> Continuous bicycle lanes Traffic calming Continuous pedestrian facilities increasing connectivity Improved pedestrian connections to transit 	<ul style="list-style-type: none"> Increased vehicle travel time Increased vehicle delay Transit vehicles would be affected by any increase in vehicle delay and travel time Requires additional right of way for sidewalk installation
Option 4C – Install a two-way cycle track on the south side of Ralston Ave and continuous sidewalks on both sides. Achieved with a partial road diet – one EB lane and two WB lanes.	-	+	+	-	-	<ul style="list-style-type: none"> Continuous bicycle facilities Continuous pedestrian facilities increasing connectivity Improved pedestrian connections to transit Traffic calming 	<ul style="list-style-type: none"> Increased vehicle travel time and delay Transit vehicles would be affected by any increase in vehicle delay and travel time Requires WB traveling bicyclists to cross Ralston Ave to access the cycle track Requires additional right of way for sidewalk installation
Option 4D – Install continuous sidewalks along Ralston Ave, but no modifications to the roadway.	o	o	+	o	-	<ul style="list-style-type: none"> Continuous pedestrian facilities increasing connectivity Improved pedestrian connections to transit No impact to vehicle traffic 	<ul style="list-style-type: none"> No improved bicycle facility Bicyclists may not feel comfortable riding in a vehicle lane Requires additional right of way for sidewalk installation

Table 4
Ralston Avenue Improvements Matrix
Segment 4 – Ralston Avenue between Alameda de las Pulgas and SR 92

Option	Auto	Bike	Pedestrian	Transit	Right of Way	Pros	Cons
Safety and Access Improvement Options							
Install Traffic Signal at Ralston Ave/Tahoe Dr. Extend median on the eastern leg to force all Westbound turns into Ralston Middle School as U-turn movements at new Tahoe Dr traffic signal.	+	o	+	+	-	<ul style="list-style-type: none">Reduces delay turning to/from Tahoe DrProvide for protected pedestrian crossingImproves pedestrian connectivity to transitWould likely need little or no right of wayRemoves the uncontrolled left-turn movement at the Ralston Middle School	<ul style="list-style-type: none">Increases overall intersection delay and travel timeTransit vehicles would be affected by any increase in vehicle delay and travel timeMiddle School turn restrictions would increase turning traffic at Tahoe DriveMiddle School turn restrictions may not be compatible with the road diet
Ralston Ave/Pullman Ave-Lyall Way – install upgraded crosswalk and pedestrian activity warning lights	o	o	+	+	-	<ul style="list-style-type: none">Increased visibility of pedestrian crossingImproves pedestrian connectivity to transitWould likely need little or no right of way	<ul style="list-style-type: none">Pedestrian crossing would remain unprotected
Remove yield controlled right-turn movements at Ralston Ave/Cipirani Blvd	-	+	+	o	o	<ul style="list-style-type: none">Eliminates need for pedestrians to cross a yield controlled movementImproves pedestrian connectivity to transit	<ul style="list-style-type: none">Increases delay for turning vehicles
Ralston Ave/Davis Dr – install upgraded crosswalk, and refuge island						<ul style="list-style-type: none">Increased visibility of pedestrian crossingImproves pedestrian connectivity to Ralston Middle SchoolImproves pedestrian connectivity to transitWould likely need little or no right of way	<ul style="list-style-type: none">

Table 4

Ralston Avenue Improvements Matrix
Segment 4 – Ralston Avenue between Alameda de las Pulgas and SR 92

Option	Auto	Bike	Pedestrian	Transit	Right of Way	Pros	Cons
Upgrade the following sections to have ADA-compliant curb ramps:	o	o	+	o	o		
• Ralston Ave/Cipriani Blvd							
• Ralston Ave/Davis Dr							
• Ralston Ave/Belmont Canyon Rd (both intersections)							
• Ralston Ave/Ralston Ranch Rd							
• Ralston Ave/Christian Dr							
• Ralston Ave/SR 92 EB Ramps							
						• Provide enhanced access for persons with mobility impairments	

Note: + indicates a positive impact; - indicates a negative impact, o indicates no impact